**Week 4 In-Class Exercises (Extra)**

**(More on Conditions, Strings and for-Loops)**

**Q1: Print Patterns**

**(a) [ \*\*\* ]**

Define a function called print\_square\_1(). The function takes in a single parameter n, which you can assume is a positive odd number greater than or equal to 5. The function prints out an square using asterisks that’s divided into four small squares. See the examples below to understand the behaviour of the function:

* print\_square\_1(5) displays the following:

\*\*\*\*\*  
\* \* \*  
\*\*\*\*\*  
\* \* \*  
\*\*\*\*\*

* print\_square\_1(9) displays the following:

\*\*\*\*\*\*\*\*\*  
\* \* \*  
\* \* \*  
\* \* \*  
\*\*\*\*\*\*\*\*\*  
\* \* \*  
\* \* \*  
\* \* \*  
\*\*\*\*\*\*\*\*\*

**(b) [ \*\*\* ]**

Define a function called print\_square\_2(). The function takes in a single parameter n, which you can assume is a positive odd number greater than or equal to 5. The function prints out a square using asterisks that’s divided into four triangles. See the examples below to understand the behaviour of the function:

* print\_square\_2(5) displays the following:

\*\*\*\*\*  
\*\* \*\*  
\* \* \*  
\*\* \*\*  
\*\*\*\*\*

* print\_square\_2(9) displays the following:

\*\*\*\*\*\*\*\*\*  
\*\* \*\*  
\* \* \* \*  
\* \* \* \*  
\* \* \*  
\* \* \* \*  
\* \* \* \*  
\*\* \*\*  
\*\*\*\*\*\*\*\*\*

**Q2: Longest Subsequence of Letters [ \*\*\* ]**

Define a function called get\_longest\_subsequence(). The function takes in a single parameter, which is a string. Call this parameter input\_str. The function should return the longest subsequence from input\_str that consists of only the letters from the English alphabet (both uppercase and lowercase letters included). If there are multiple subsequences of the same longest length, the function returns the first one. If input\_str doesn’t contain any letter, the function returns an empty string.

For example,

* get\_longest\_subsequence('ab24[AaBbCDExy0longest$]') should return 'AaBbCDExy'.
* get\_longest\_subsequence('a a a1234b|c|d ') should return 'a'.
* get\_longest\_subsequence('12345 ') should return ''.